

REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-17 are presently active in this case. The present Amendment amends Claims 1-4, 12-13, and 16-17 without introducing any new matter.

The outstanding Office Action objected to the specification and Claims 13-16 for informalities. Claim 15 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 1-15 were rejected under 35 U.S.C. § 103(a) as unpatentable over Zhou et al. (U.S. Patent No. 7,287,855, hereinafter “Zhou”) in view of Johs et al. (U.S. Patent No. 5,936,734, hereinafter “Johs”). Claim 16 was rejected under 35 U.S.C. § 103(a) as unpatentable over Zhou et al. (U.S. Patent No. 7,287,855, hereinafter “Zhou”) in view of Easley et al. (U.S. Patent No. 5,603,710, hereinafter “Easley”).

In response to the objection to the specification, the passage relating to Fig. xxx has been deleted. No new matter has been added by this amendment. In addition, Claims 13-16 are now numbered as Claims 14-17 to avoid a duplication of Claim 13. Again no new matter has been added.

To correct minor formal issues, Claims 1-4, 12-13, and 16-17 are amended. No new matter has been added by these amendment. Moreover, Claim 15 is amended to recite “a fourth set of images,” to thereby correct an issue of antecedent basis, to address the rejection of 35 U.S.C. § 112, second paragraph. Because this change is formal in nature, no new matter has been added.

In response to the rejection of Claims 1-15 under 35 U.S.C. § 103(a), Applicants respectfully request reconsideration of this rejection and traverse the rejection, as discussed next.

Briefly summarizing, Applicants' independent Claim 1 is directed to a method for identifying features in an object. The method includes positioning and focusing polarimeter onto the object; illuminating the object with a series of at least 16 polarization states; analyzing a plurality of reflected images corresponding to said at least 16 polarization states; obtaining a Mueller matrix for each of the plurality of reflected images; and calculating a depolarization parameter from the Mueller matrix.

Turning now to the applied references, Zhou is directed to a method for removing the effects of corneal birefringence from a polarimetric image of a retina. (Zhou, Abstract, col. 1, ll. 22-26.) In the background of his description, Zhou describes a Mueller matrix polarimetry technique for examining depolarization properties, and explains the creation of sixteen independent optical measurements are necessary to populate the Mueller matrix components, by using two independently rotatable quarter-wave plates (Zhou et al., col. 4, ll. 10-27.) However, Zhou fails to teach a step of calculating a depolarization parameter from the Mueller matrix, as required by Applicants' independent Claim 1. The pending Office Action also confirms that Zhou fails to teach anything related to the calculation of a depolarization parameter. (Office Action, p. 3, l. 8.)

However, the Office Action asserts that such features are found in the reference Johs, and also assumes that the combination of Zhou and Johs is proper. (Office Action, p. 3, ll. 9-13.) However, Applicants respectfully submit that Johs merely explains that an electromagnetic beam percent depolarization parameter can be determined from a polarized beam that traverses compensators C2, C3 and measured at a detector DET. (Johs, col. 23, ll. 35-57, Fig. 6.) Johs' teachings are directed to a reflection and transmission ellipsometer system to investigate a patterned sample system. (Johs, Abstract.) However, Applicants' Claim 1 requires a step of "calculating a depolarization parameter from the Mueller matrix," and this feature is not taught by the cited passages of Johs. It appears that the calculation of a

parameter from an electromagnetic beam in Johs has nothing to do with parameter calculation from a Mueller matrix.

In addition, Applicants believe that the combination of the references Zhou and Johs is improper, because Johs does not calculate any parameters from a matrix, but from intensity values and phase shift between different polarized beams. (Johs, col. 23, ll. 38-48.) Substantial redesign of Zhou's system would be required, that would not make such modification obvious.¹

Therefore, even if the combination of Zhou and Johs is assumed to be proper, the cited passages of the combination fails to teach every element of Applicants' Claim 1. In addition, independent Claim 17 directed to a method of retinal polarimetry is also believed to be patentably distinct over the cited passages of these references, because it recites "analyzing said Mueller matrix to obtain a depolarization parameter." Accordingly, Applicants respectfully traverse, and request reconsideration of the rejection of Claims 1 and 17, and all associated dependent claims.

Moreover, Applicants' independent Claim 13 is directed to a method of retinal polarimetry including *emitting laser light to a retina via (a) a polarizer, (b) a first liquid crystal polarization controller, (c) a non-polarizing beam splitter, (d) a rotating half-wave retarder, and (e) an objective lens*, the laser light *passing through (a), (b) and (c) in this order*; and reflecting light from the retina to a co-polarized photodetector via the objective lens, the rotating half-wave retarder, the non-polarizing beam splitter, a second liquid crystal polarization controller, and a polarizing beam splitter.

¹ See *In re Ratti*, 270 F.2d 810, 813, 123 USPQ 349, 352 (reversing an obviousness rejection where the "suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate.")

Zhou describes an scanning laser polarimeter for ophthalmology, where a laser light 62 exits a laser diode 60, and passes through a polarizing beam splitter 64, and then a non-polarizing beam splitter, where it is scanned by scanners 72 and 74. (Zhou, Fig. 4, col. 9, ll. 47-53.) However, first, the cited passages of Zhou fails to teach a first liquid crystal polarization controller, and second, Zhou fails to teach that the laser light passes first through a polarizer, then through a liquid crystal polarization controller, and next through a non-polarizing beam splitter, as required by independent Claim 13. Therefore, Applicants respectfully traverse the rejection of independent Claim 13, and respectfully request reconsideration thereof.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 1-17 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants' undersigned representative at the below listed telephone number.

Respectfully submitted,

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